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AN  
ACCOUNT  
OF THE  
EFFECTS OF SWINGING, &c.

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AN  
ACCOUNT  
OF THE  
EFFECTS OF SWINGING,  
EMPLOYED AS A REMEDY  
IN THE  
PULMONARY CONSUMPTION  
AND  
HECTIC FEVER.  
WITH AN  
INTRODUCTORY LETTER  
TO SIR JOSEPH BANKS, BART.  
PRESIDENT OF THE ROYAL SOCIETY.

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BY JAMES CARMICHAEL SMYTH,  
M.D. F.R.S.  
PHYSICIAN EXTRAORDINARY TO HIS MAJESTY.

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## P R E F A C E.

**T**HE following account of the effects of swinging was written last winter, with the intention of laying it before the Royal Society, but as in the opinion of the President, and of some other friends, it was thought to contain too much medical detail to be conformable to the plan of that Institution, the design was given up, and all thoughts of publishing it were laid aside, until farther observations should enable me more fully to confirm the truth of what was there advanced.

I have not ventured then to recommend the practice to public notice, till after a second summer's experience of its efficacy, and after repeated instances of the advantages derived from it. I am aware, that the simplicity of the remedy will be a  
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considerable objection to its being adopted ; but happily it is a plain matter of fact, which may be easily ascertained, and of which every one is competent to judge.

I have likewise, in the following pages, endeavoured to refute an opinion very generally entertained of the salutary influence of sea air on the consumptive. How far my observations or reasoning on that subject are well founded, I leave others to determine ; satisfied with having done my duty, in opposing what appears to me an erroneous practice, and which on several occasions has been attended with fatal consequences. “ *Id tantum ratus ad me  
“ attinere, ut viri probi scilicet officio de-  
“ fungar, et boni medici ; quantum pati-  
“ tur tenuitas nostra. \**

\* Sydenh. Epist. respons.

T O

SIR JOSEPH BANKS, BART:

PRESIDENT OF THE ROYAL SOCIETY.

S I R,

**H**AVING long entertained an opinion that persons afflicted with pulmonary complaints, would derive considerable advantage from the motion of swinging, I was desirous of bringing it to the test of experience, and with this view made an application to the governors of the Middlesex Hospital, who very obligingly ordered a swing to be put up in a garden belonging to the charity; the effect of which, I last summer had an opportunity of trying in fourteen cases of hectic fever; and as the success attending these experiments

experiments was such, as not only to justify the idea I had formed, but even to exceed my expectation, I have taken the liberty of sending you some short account of them, to be laid before the society, if you think the subject deserving of their attention. It has at least the merit of novelty, and clearly shews that the motion of swinging has some other effects on the body, besides those more commonly known, and which, I have no doubt, when better understood, will be found of more extensive application.

I have the honour to be,

with the greatest respect,

S I R,

Your most obedient servant,

JAS. CARMICHAEL SMYTH.

Charlotte-street, Bloomsbury,  
March 29th, 1786.

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*Of the Effects of SWINGING in the*  
PULMONARY CONSUMPTION *and*  
HECTIC FEVER.

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**T**HE great advantage of sailing, in the cure of consumptions, was known many centuries ago. We find it recommended by Aretæus, the first of the Greek physicians, after Hippocrates; by Cœlius Aurelianus, by Celsus, by the elder Pliny, and others. But although the benefit of sailing, in this disease, is now generally known, physicians are still of very different sentiments respecting

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the particular circumstance, or combination of circumstances, from which this benefit is derived. Much has been ascribed to the salubrity of the sea air, and to the change of air ; some virtue has been supposed to be communicated from the tar and rosin of the ship ; the peculiarity of the exercise has been taken notice of, whilst many have imagined that the sole advantage of sailing arose from the sickness and vomiting, which the motion of a ship at sea usually occasions. It may not be entirely useless, or foreign to the present purpose, briefly to examine these opinions, which have had so considerable an influence on the practice of physic, and ultimately on the life of man.

Dr. GILCHRIST, the only person I know, who has written expressly on the application



application of sea voyages, to the purposes of medicine, imagined that the success of these in curing consumptions, was chiefly owing to the salubrity of the sea air, to which the patient was more constantly exposed in this way, than he possibly could be in any other ; and agreeable to this idea, he advises those who from timidity, or weakness, dare not undertake a voyage at sea, to repair to the sea shore, and there, by riding or walking on the beach, to inhale as much as possible the saline effluvia.

Dr. RUSSEL, whose name in this country is still better known, believing every consumption of the lungs to be a scrophulous affection, is equally warm in his panegyric on the efficacy of sea air and sea water, for the cure of it.

Besides these, I could mention many other physicians in considerable practice, though probably without any particular experience on this subject, who daily recommend sea air, and situations on the sea shore, as salutary to the consumptive. But after having resided nine summers on the sea coast, with the many opportunities such a situation afforded me, of seeing and judging of this subject, I must declare, though in direct opposition to the preceding authorities, that the sea air, so far at least as I have observed, is constantly prejudicial to the hectic and consumptive, and even to those who have any tendency to these complaints. It is not, however, improbable that I might now, as formerly, apprehend some fallacy in my own observations, or imagine that what I had seen was the effect of local causes, had not other gentlemen of accuracy,



accuracy, in similar situations, made the same remark with myself.

Dr. KNOX, who for many years has practised at Scarborough, and whose character as a physician is well known, assures me, that he has constantly observed the air on the sea coast, hurtful to the consumptive: I have likewise the satisfaction to learn from Sir Lucas Pepys, that his experience of the effect of the sea air at Brighthelmstone, is exactly conformable to my own; and as a farther confirmation of this fact, I may add the testimony of a foreign physician, Dr. Ciciri of Milan; who informs me, that the present practice of the Italian physicians, (a practice doubtless founded on experience,) is to remove consumptive patients from the sea coast to the interior parts of the country. I have  
also

also been told by a gentleman of observation, who resided long at Nice, and in the southern provinces of France, that the physicians there entertain the same opinion of maritime situations, believing them to be unfavourable to the consumptive. Of the celebrated air of Montpellier, formerly resorted to by invalids from all parts of Europe, I can speak from my own knowledge, and have no hesitation in declaring it to be, in my opinion, one of the most improper places for the consumptive, that could possibly have been chosen ; which however is not entirely owing to its vicinity to the sea, but likewise to its elevated situation ; being equally exposed to the north wind blowing from the high mountains of the Cevenne, and to the north east wind, or (*vent de bize*) which blows from the still higher and frozen regions of the Alps.

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We also know for certain, that the island of Madeira, notwithstanding its temperate latitude, and the very great equality of its climate, \* is very unfavourable to those whose lungs are materially injured.

In opposition to these facts it may possibly be alledged, that not only several modern physicians, but also some of the antients, have recommended the air of the sea-shore as the most proper of any for the consumptive. By Galen they were sent to Stabiæ, a place situated between Naples and Surrentum; and Celsus says,  
 “ Utilis etiam in omni Tussi est peregrinatio,  
 “ natio,

\* From Dr. Heberden, of Madeira, we learn, that in fourteen years observation, he had never known the thermometer in the shade to rise higher than 74, or fall lower than 54; a degree of equality hardly to be found in any other part of the globe.

“ natio, navigatio longa, loca maritima.”  
 To this passage, indeed, we may fairly  
 oppose the sentiments of the same author,  
 who, in his Chapter de Tabe, gives a  
 seemingly different advice: “ Opus est  
 “ cæli mutatione, sic, ut densius quam id  
 “ est, ex quo discedit Æger, petatur;  
 “ ideoq; aptissime Alexandriam ex Italia  
 “ itur.” It should also be remembered,  
 that in those times it was not an unfre-  
 quent practice to send phthysical invalids  
 into the interior parts of Libia, a situation  
 which must be allowed to be sufficiently  
 remote from the sea.

Upon the whole, from what has been  
 said, I think it clearly appears, that the  
 opinions both of antients and moderns on  
 this subject, have been rather the offspring  
 of theory or fashion, than the result of  
 any fixed principle, or accurate process of  
 reason-

reasoning ; and that both have fallen into the same error, confounding the effect of sailing, with that of sea air, two things in their nature totally distinct, and to a certain degree opposite, the one proving salutary, the other prejudicial to the consumptive. A remarkable instance of the truth of this assertion, which I met with some years ago, I shall here take the liberty to relate.

A young lady was sent to Margate, with symptoms of a pulmonary phthisis, which soon made so rapid a progress as to leave no doubt of the nature of the distemper. I advised her parents, by whom I was consulted, to quit the place, and to go with their daughter to some inland and warmer situation ; but finding that my advice could not be immediately complied with, I requested that whilst she remained at Mar-

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gate she should, when the weather was favourable, sail for some hours every morning. The immediate benefit she received by doing so, was truly surprizing ; for frequently after she had passed a very restless night, and when weak and low from the colliquative morning sweating, the boat had scarcely got out of the harbour, before her strength and spirits revived ; her cough, at other times constant and troublesome, entirely left her, and she remained free from it whilst she continued on board ; but no sooner was she on shore, than this, as well as the other symptoms, again returned. The sailing never caused sickness or vomiting ; whether the pulse was affected by it or not, I cannot take upon me to say ; for not suspecting at the time that this could possibly happen, I did not think of examining it. This young lady went from Margate to Bristol, and afterwards  
abroad,



abroad, but the disease in the end proved fatal.

If what has been said of the baneful influence of sea air on the consumptive, shall be confirmed by future experience, which (so far as any general proposition can be) I have no doubt will be the case, it would be unphilosophical and absurd, to assume it any longer as the cause of that advantage which is derived from sailing, in the cure of this disease. We shall therefore proceed to examine the other causes assigned, that we may be enabled to form some judgment also of their operation, and of the share they can possibly have in producing the advantage ascribed to them.

In what manner, or to what degree, change of air affects the human frame, is not yet accurately known, but it is evi-

dent that any benefit to be derived from it, may be obtained with much greater certainty on shore than at sea, as the air on shore admits of great variety, according to the height, exposition, soil, produce of the land, &c. whereas the only difference that can possibly take place in the air at sea, is a difference of temperature. If by change of air is only meant a quick succession of air, owing to the velocity with which the body moves through it, this also can be equally, if not more certainly, obtained on shore than at sea.

Whether the effluvia of the tar and rosin of a ship, can at all contribute to the cure of a consumption, is a question hardly deserving a serious discussion. Some centuries ago, fumigations were held in much higher esteem than at present, for  
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the cure of pulmonary complaints ; this practice has been gradually, and, I think, deservedly, falling into disuse ; not but that there are instances still to be met with of persons who have received, or think they have received, relief to their breathing from the vapour of boiling tar, rosin, &c. but experience has taught us, that these and all other fumigations are of trifling benefit, and frequently do more harm, by exciting coughing, than they can possibly do good by relieving the breathing ; and the idea formerly entertained, that this complaint was to be cured by the healing and drying up of ulcerations in the lungs, we now know to be founded on a false pathology, and ignorance of the true nature of the disease.

Dr.

Dr. GILCHRIST seems to have had great expectations from the exercise of sailing, and has been at pains to explain the reason of its being so peculiarly adapted to the consumptive, but from his manner of treating the subject, it is evident that he was entirely unacquainted with a distinction necessary to be made between motion and exercise. Sailing, without doubt, implies motion, but it does not necessarily imply exercise; a person may be on board a ship, making a considerable way through the water, and yet, unless from the view of distant objects, may not be in the least sensible of motion, and if sitting or lying (consequently at rest) how can he be said to be using exercise? a word synonymous to action, and which always signifies motion or agitation of the body, produced chiefly, if not entirely, by its own powers.

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There still remains for our consideration, the sea sickness and vomiting, which, as being the most usual and obvious effect of sailing, has generally been looked upon as the principal, if not the only cause, of the benefit derived from it. Every physician of experience, is acquainted with the general efficacy and extensive influence of vomiting; by which almost every part of the body is affected, more particularly the lungs and organs of respiration: and therefore the exciting of vomiting, is on many occasions, where the breathing is oppressed, or where expectoration is necessary, the most certain and immediate means of relief. But these are not the complaints for which we have recourse to sailing, nor are they the cases where its efficacy as a remedy is most conspicuous. To bring, however, this question to a short issue, if the advantage

tage derived from sailing was owing principally, or entirely, to vomiting, (as the effect must always be proportionate to the cause) the degree of advantage would be *cæt. par.* in proportion to the vomiting excited, which is by no means the case; on the contrary, in most instances where I have seen any singular advantage derived from sailing, the sick were not at all, or but slightly affected, by nausea and vomiting; whilst, on the other hand, I have known persons suffer violently from both during the whole time of their being at sea, without the least abatement of the cough or hectic symptoms.

From what we have seen then of the various theories, or conjectures, to explain the advantage of sailing in the cure of consumptions, we must acknowledge that the true cause, or circumstance, from  
which

which this advantage is derived, has hitherto escaped the notice of physicians and philosophers; although, if I am right in my opinion, it is so extremely simple, that when once pointed out, it will be found to resemble (if I may be allowed the comparison) the egg of Columbus.

But to explain properly my ideas on this subject, it is necessary first to establish the distinction already alluded to, between exercise and motion, a distinction which so far as I know, has not yet been made by any person whatever. By exercise is commonly understood muscular action, or the exertion of the locomotive powers of the body, either alone or combined. The common effect of this is to increase the force and frequency of the heart's contraction, the velocity and momentum of the blood, the quickness of the breath-

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ing, the heat, irritability and transpiration of the whole body ; exercise gives also a temporary increase of strength and vigour, but when continued beyond a certain time, induces lassitude, debility, and languor ; when regulated according to the strength, it promotes digestion, gives tone and vigour, not only to the stomach, but to the whole system ; and is therefore of service when the action of the stomach is impaired, or in cases of general weakness : to pulmonicks it occasions a sense of oppression at the chest, with a shortness of breathing, cough, and palpitation of the heart, and therefore proves hurtful, or is of doubtful efficacy, where the lungs are obstructed, inflamed, or too irritable ; and where the circulation is already too rapid. Such are the effects of exercise. Let us next consider those of motion, that from comparison we may judge of the difference between them.



By motion, when contrasted with exercise, we mean motion not necessarily accompanied with any agitation, or succussion of the body, and which is totally independent of any muscular exertion. The two most obvious examples of this are sailing and swinging, to which possibly a third may be added, viz. aërostation; this being likewise a method of conveying an animal with great velocity through the atmosphere, without the smallest exertion of its own powers, or even consciousness of motion; but as the expence and hazard attending such experiments preclude them from being applicable to the purposes of medicine, or of common life, they must always remain more a matter of curiosity than of use. I shall therefore confine myself, in the following observations, to sailing and swinging, two kinds of motion with whose effects we are better ac-

acquainted, and between which a very strict analogy will be found. Most persons unaccustomed to sailing, are at first affected with giddiness, sickness and vomiting, symptoms evidently the direct and immediate consequence of the unusual motion, and which, generally speaking, are severe in proportion to the delicacy and irritability of the individual.\* But if motion can thus occasion such extraordinary effects on the human frame, is it not reasonable to suppose, that it may likewise be the cause of others, which being less remarkable, have been less attended to? I have already given one example in support of this opinion, where the motion of sailing had an immediate effect in removing, or at least in suspending the action of coughing. But the effect of motion is not confined to the

\* This observation is only applicable to adults, for infants are an exception to the rule.



the lungs; the heart also feels its influence, as is evident from the frequency of the pulse being sometimes lessened by it. Dr. Gilchrist, without suspecting the cause, has recorded a remarkable instance of this, which was communicated to him by a physician, who travelled with a young nobleman ill of a pulmonary consumption. It was remarked that the pulse of the patient, after he had been a few days at sea during a short voyage from Marseilles to Malta, was reduced in frequency from 90 or 100 to 80. But to convince even the most sceptical, that the irritation which excites coughing may be removed, and the pulse lessened in frequency, by motion alone; it must surely be thought sufficient evidence if I shew that these effects are produced not only by sailing, but also by swinging, the motion of which is extremely similar to that of sailing,

failing, though resembling it in no other particular. To do this however in a satisfactory manner, it will be proper to give an abstract of those cases in which fwinging was employed as a remedy.

## CASES

CASES of *Consumptive or Hætic*  
 PATIENTS *admitted at the MIDDLE-*  
*SEX HOSPITAL, during the Summer*  
*of the Year 1785.*

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C A S E I.

WILLIAM SPRAG, 45 years of age,  
 was received into the hospital on the  
 31st day of May. He was greatly ema-  
 ciated, his breathing was quick and difficult,  
 with a constant cough, and purulent ex-  
 pectoration to the quantity of half a pint  
 or a pint a day ; his pulse was 134 in a mi-  
 nute, with evening exacerbations of fever  
 and colliquative sweating in the night.  
 On the 16th of June he was put for the  
 first time into the swing. On the day  
 following between five and six in the  
 evening

evening his pulse \* (reckoned by the apothecary) before he went into the swing was 124, and after swinging for ten minutes was only 119. On the 19th, after swinging ten minutes, his pulse fell from 114 to 103; and the evening exacerbation of fever was this night less violent. On the 23d, after swinging for about ten minutes, his pulse was less frequent by 13 pulsations in the minute. On the 25th of June having caught cold, or having been guilty of some irregularity, his fever returned, his cough became again frequent, and was now attended with pain in his

\* For many of the observations respecting the immediate effect of swinging on the pulse, I am indebted to our apothecary Mr. Boffè; who, at my request, attended the patients whilst they were swinging, and examined their pulse by a stop watch both before and after. The house surgeon and other gentlemen belonging to the hospital were likewise often present, and confirmed the truth and accuracy of his reports.

his side, sickness, diarrhea, tension of the abdomen, great anxiety, &c. these symptoms continued some days, during which he was confined to his bed. On the 1st of July he spat up a little blood, and found himself somewhat relieved. On the 3d he was again able to use the swing, and continued to do so twice a day, swinging commonly half an hour each time. The apothecary reported, that he generally found his pulse about 14 pulsations slower in the minute, after half an hour's swinging; the patient himself said, that he always felt cooler, breathed easier, and expectorated more freely, after having been some time in the swing; and it was apparent to every one, that all the symptoms were gradually decreasing. On the 15th he had no evening exacerbation of fever, or night sweats; and he continued to recover, in every respect, till the 26th of

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July,

July, when he was discharged from the hospital. He afterwards went into the country, and on the 30th of August, remained, to all appearance, in perfect health.

## C A S E II.

HUMPHREY WALKER, 23 years of age, was admitted an out-patient at the hospital on the 19th of July: he was of a slender make, and for some years past had been subject to a cough, at times spitting up blood in considerable quantity; he complained also of great shortness of breath, sense of oppression at his chest, and loss of appetite; he had regular evening exacerbations of fever, preceded by chilliness, and followed by colliquative sweating in the night; his skin was hot and dry, and his pulse 130 in the minute. As this man was an out-patient, there was no particular



lar report made of his case, I therefore only know for certain, that he had caustics applied to his chest, took the common medicines, and went every day into the swing; that the frequency of his pulse gradually diminished, and that in the course of some weeks he recovered his usual health.

### C A S E III.

WILLIAM COATES, 25 years of age, a man with a distorted spine, was admitted into the hospital on the 28th of June. He complained of pain at his breast, shortness of breath, night sweats, and hectic heat. His pulse was 128 in a minute. Caustics were applied on each side the curvature of the spine, and he was put into the swing as soon as his strength would admit of it; but though, from this practice, his breathing was somewhat relieved, and he expect-

torated more freely, yet for the first fortnight his pulse was not sensibly affected by it; but afterwards it fell to 101, or 100. On the 26th of July, finding himself considerably better, he was discharged at his own desire. On the 2d of August he was again brought back to the hospital, with a continued fever, and a return of his former complaints. On the 4th the fever assumed a remitting form, preceded by chilliness, and followed by profuse night sweats. On the 10th he again went into the swing, and after swinging five-and-twenty minutes, his pulse fell from 128 to 120. The symptoms of his disorder after this gradually gave way, his pulse was less frequent, and he was discharged, free from complaint, on the 13th of September. The last time that he was in the hospital he twice caught cold, and each time his pulse  
rose



rose to 130. The apothecary, who paid particular attention to this man, remarked that he never coughed whilst in the swing; and the man himself told me, that he constantly felt cooler, breathed easier, and expectorated more freely immediately afterwards.

#### C A S E IV.

THOMAS MATTOCKS, 39 years of age, was, on the 18th of April, admitted an out-patient at the hospital; he had a pain in his right side, his breathing was remarkably short, and his fits of coughing were very frequent, especially at going to bed, and when he first awoke in the morning. His expectoration was saltish, sometimes offensive, and generally to the quantity of half a pint in the night and morning. He was hot at night, particularly in the palms of his hands, and sweated profusely  
towards

towards morning; he had lost his strength and flesh, and though his appetite was tolerably good he was frequently sick after eating; his pulse was 136. This man had been ill about three months before he applied at the hospital, and had already attended there for three months without receiving any sensible advantage. On the 22d of July he had two caustics applied to his back, and began the practice of swinging. He told me, that while he was swinging he seldom coughed, or if he happened to do so, he was sensible that he expectorated much more easily; he also found his breathing greatly relieved by it. He came regularly to the swing twice a day, and commonly used it twice each time. I repeatedly examined his pulse, and found it every time less frequent. I could also perceive a very sensible amendment in his general health. His pulse

pulse on the day he was discharged was 94, and afterwards, on the 6th of November, when he called at my house, was only 74, regular and full; he breathed easily, and excepting coughing and expectorating a little in the morning when he first awoke, told me, that he enjoyed perfect health.

#### C A S E V:

RICHARD MILLER, 23 years of age, when admitted into the hospital on the 23d of August was greatly emaciated, had a cough, shortness of breath, loss of appetite, hectic fever, night sweats, purulent expectoration. His pulse was 128. A caustic was applied under each breast, and as soon as the pain occasioned by these had abated, he was put into the swing; which, for the first three or four days, had no effect on the pulse, but afterwards

wards, when he continued swinging for half an hour each time, his pulse gradually fell to 96, and the other symptoms having decreased in proportion, he was at the end of three weeks made an out-patient, but was advised to continue the practice of swinging for some time longer. On the 20th of September, having caught fresh cold, or from some irregularity, his former complaints returned. He again applied to the hospital, and had two fresh caustics put on, took his former medicines, and resumed the practice of swinging, from which he experienced the same good effects as before, and in a short time recovered his health.

#### C A S E VI.

DANIEL FANCH, aged 26, who had for some time attended the hospital as an out-patient, being afflicted with the tape-  
worm

worm or *Tænia*, was admitted into the house on the 8th of April; he was then extremely weak and emaciated with a perpetual diarrhœa, hectic fever and colliquative sweating towards morning; he had also a trifling cough, but this seemed rather to be symptomatic than to arise from any affection of the lungs. The diarrhœa was soon removed by medicine, but his pulse continued remarkably quick, being never slower than 128, and sometimes 132 in the minute. He had a chilliness towards evening, followed by a febrile paroxysm, and sweating. A decoction of the Peruvian bark, &c. had some effect in checking the colliquative sweating, but had none in preventing the evening exacerbations of fever, or in lessening the frequency of the pulse; for these complaints I therefore advised him to make trial of the swing, the effect of which

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was

was very remarkable, removing, in a short time, both the fever and sweating. And the man, having recovered his strength and appetite, was discharged from the hospital on the 18th of October, to all appearance, in perfect health; his pulse only 88 in a minute.

#### C A S E VII.

MARY HARTLEY, 23 years of age, having been for three or four weeks ill of a remitting fever, attended with cough and other symptoms of pneumonic inflammation, was, on the 9th of August, received into the hospital. Her countenance was pale, her breathing extremely laborious, with great restlessness and anxiety; her skin was hot and dry, excepting in the night, when she sweated profusely. She had a troublesome cough, and expectorated true purulent matter streaked



streaked with blood ; her pulse, on the day of her admission, was 128 in a minute, but the day after, it rose to 136, and she expectorated about twelve ounces of matter, with some coagulated blood. On the 13th the expectoration was less in quantity, altered in colour, and without blood. The pulse again was 128. On the 16th, though there was no sensible alteration in the other symptoms her pulse was 140. On the 20th her pulse was only 124, and she was able to sit up a short time in bed. From this time she seemed to recover, and on the 27th was carried into the garden, that she might make use of the swing. Her pulse, at that time, 124, was not sensibly lessened by the swinging ; but on the following day, after swinging for twenty minutes, it was eight pulsations slower, and after swinging on the 29th, was found to be less frequent

by twelve pulsations at least; it ought however to be remarked, that although she persevered in the practice of swinging every day, for ten days longer, the pulse still continued at the same degree of frequency, being never slower than 112. But as she recovered her health in every other respect, I was inclined to believe, that the quickness of pulse arose from general irritability, and was not owing to hectic fever. I therefore dismissed her from the hospital on the 6th of September.

#### C A S E VIII,

MARY PUGH, aged 19 years, was received into the hospital on the 12th of July, with all the symptoms of a confirmed consumption, viz. cough, pain of the side, purulent expectoration mixed with blood, quick and difficult breathing, evening exacerbations of fever and morning sweats. Her pulse was 140 in a minute.

She

She had a caustic applied to her side, and took the common medicines, but was too weak and low to be moved out of bed. On the 22d of July, ten days after her admission, her cough was less frequent, and the expectoration was somewhat diminished; but her breathing, pulse, and colliquative sweating were the same as formerly. On the 26th, she, for the first time, got out of bed, and on the 27th was brought into the garden, and put into the swing, her pulse being still 140. She was swung for ten minutes, when being extremely giddy from the motion she could bear it no longer; \*her pulse was rather increased than lessened in frequency, but in about an hour and a half after it was only 136. She was afterwards  
carried

\* I have likewise on other occasions, when the swinging caused giddiness and faintness, observed that the frequency of the pulse was rather increased than reduced by it.

carried to the swing twice a day, and though the pulse remained as frequent as ever, yet she sensibly gained strength, and on the 30th was able to walk without assistance into the garden. On the 3d of August, having been confined to the house, for some days before, on account of the badness of the weather, her complaints became more violent ; she had therefore a fresh caustic applied to her breast. On the 8th, as the cough, breathing, &c. were greatly better, though the frequency of pulse and night sweats remained, I ordered her a decoction of the bark, with the extract of Hyoscyamus\*, and she continued the practice of swinging ; from this time she recovered very fast, her pulse became

\* This medicine, which is not commonly known or employed, I have often found extremely useful in cases of cough, especially when accompanied with spitting of blood ; also in other hæmorrhages.

became less frequent, her night sweats left her, she regained her flesh and strength, and was discharged, perfectly well, on the 20th of September.

### C A S E IX.

ELIZABETH BEAZELY, 23 years of age, was admitted into the hospital on the 28th of June, having a continued fever, with symptoms of pulmonic inflammation; her countenance was flushed, her tongue white, skin dry, and her pulse 136. She complained of violent heat, head-ach, thirst and weakness; at the same time her breathing was oppressed, and her cough troublesome, attended with an expectoration of white phlegm. By the 3d of July the symptoms of continued fever having abated, the disease assumed the type of a hectic intermittent; the quick-

quickness of pulse remaining, with a regular chilly fit every evening about six o'clock, followed by a hot fit and profuse perspiration during the night. On the 4th, after taking an emetic, she brought up a considerable quantity of matter mixed with blood, and found herself much relieved. On the 11th she had caustics applied to her back. On the 17th, having passed a tolerable night, she was carried to the swing; the motion occasioned no giddiness, she did not cough during the time of swinging; she also breathed easier, and after swinging for twenty minutes her pulse fell from 128 to 114, and she afterwards passed a better night than usual. On the 18th, at two o'clock, she was again put into the swing, and after swinging twenty-five minutes her pulse was reduced in frequency from 124 to 112. On the 19th she walked down stairs without



out any assistance, went into the swing for half an hour, then walked about the garden, and was swung a second time. At her return into the hospital her pulse was only 104, and she had now an appetite for food. Continuing to swing regularly once or twice a day, her cough, spitting, night sweats, and other symptoms gradually left her, she recovered her health and strength, and was discharged on the 29th of July, free from all complaint, with her pulse 88 in the minute.

#### C A S E X.

ANN HINLOW, 20 years of age, was admitted an out-patient at the hospital on the 3d of May, having a pain in her breast, difficulty in breathing, cough, and spitting of blood, with a quick and small pulse. On the 28th of June, having the preceding week several times spat blood in

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considerable quantity, she was taken into the hospital, and on the 5th of July was put into the swing; whilst swinging she did not cough, and breathed easier; but it occasioned no alteration in her pulse, and affected her so much with giddiness and sickness as to oblige her soon to desist. On the 8th she again tried to swing, but the motion had the same effect as at first; she therefore gave up any farther trial till the morning of the 18th; it then occasioned faintness, but she being determined to persevere, tried it again in the evening, and found that it then caused no giddiness,\* and her pulse fell from 128 to 120; but in an hour afterwards an exacerbation of fever coming on it rose to 130. She was now very weak and emaciated, and her pulse,

\* I have several times had occasion to observe, that the motion of swinging does not so readily cause giddiness, sickness, &c. after dinner as in the morning.

pulse, though it fell from 4 to 8 pulsations immediately after swinging, never was lower than 104, and she now and then had returns of the spitting of blood. On the 28th of July she was seized with a contagious fever, which at this time was common in the hospital. On the 9th of August she had so far recovered from this, as to be sent a little way into the country, where she continued to take medicines a fortnight longer; and since this time has enjoyed, as I am informed, perfect health.

### C A S E XI.

MARY LEE, 59 years of age, was admitted into the hospital on the 9th of August with a cough, shortness of breath, chilliness in the evening, and sweating in the night. She had a blister put on her breast, took the usual medicines, and made use of the swing. Her pulse gra-

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dually decreased in frequency from 128 to the natural standard; the other hectic symptoms being also removed, she was discharged on the 23d of August.

### C A S E XII.

ELIZABETH BERGER, 45 years of age, was admitted on the 20th of September with febrile symptoms; she had also a cough, shortness of breath, spitting of purulent matter, night sweats, &c. Pulse 128. She had caustics applied on her breast, took some medicines, and on the 23d went into the swing: after swinging gently for half an hour, during which time she was free from cough, her pulse fell eight pulsations in the minute. She continued to swing twice a day when the weather was favourable, and always with the same good effect. The fever and night sweats left her, the cough and spitting became less considerable, and on the  
11th

11th of October she was dismissed from the hospital, with a pulse between 70 and 80, and free from complaint.

### C A S E XIII.

SARAH WARWICK, aged 26, was admitted on the 28th of September, with cough, shortness of breath, expectoration of purulent matter with blood, and night sweats. Pulse 132. She had a caustic applied under each breast, took various medicines, and made use of the swing, commonly twice a day, when not prevented by rainy weather. She never coughed whilst swinging, breathed better, and thought her appetite was mended by it; but it had no very sensible effect in reducing the frequency of the pulse, which was never slower than 96. But her night sweats having left her, and her cough being less troublesome, she  
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was sent into the country on the 1st of November.

#### C A S E XIV.

WILLIAM SMITH, a lad about 13 years of age, attended the hospital as an out-patient in the month of October and beginning of November, with the symptoms of a confirmed and rapid consumption. He took various medicines, had caustics applied, and came regularly every day to the swing, but nothing seemed to check the progress of the disorder. The swinging however, though it did not lessen the frequency of the pulse, relieved his breathing, and he did not cough during the time he was swinging. The disease soon terminated fatally.

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The preceding cases naturally suggest a variety of observations, but as it is not my intention at present to write a treatise on the pulmonary consumption, I shall only draw some conclusions, or corollaries, respecting the power of motion on the body.

In the first place it is evident, that the motion of swinging has often a very sensible and immediate operation on the heart and lungs; as it reduces the frequency of the pulse, lessens febrile heat, suspends or prevents coughing, and promotes expectoration.

Secondly. If such are the effects of swinging, is it not reasonable to conjecture that sailing, a motion analogous to swinging, and which like this causes giddiness, sickness and vomiting, will also have the  
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same tacit operation on the heart and organs of respiration? And if the frequency of the pulse can be reduced, and the irritation of coughing suspended by the motion of sailing, (a fact which is not only rendered probable from analogy, but is confirmed by observation) does it not afford a complete explanation of the advantage arising from sea voyages in the cure of pulmonary complaints and hectic fever?

Thirdly. The preceding cases prove, in the clearest manner, that the effects of motion both in sailing and swinging, are not only different from, but in many respects opposite to those of exercise. Exercise increases the heat of the body and frequency of the pulse; whilst motion lessens both. Exercise frequently excites coughing; motion as frequently prevents or removes it. Exercise when violent, or too  
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long continued, occasions sweating, fatigue, and languor. Motion invigorates even the most weakly, nor can it occasion sweating, or be followed by fatigue \*. In short, exercise acts as a stimulus, motion as a sedative, on the system; and like all other sedative or narcotic powers, whose action seems to be immediately on the nervous influence; it lessens the principle of irritability, and counteracts the causes of irritation. Hence the efficacy both of motion, and of sedative medicines, in removing coughing, diminishing the frequency of the pulse, producing costiveness, † drowziness and sleep; and both

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\* This however can only be affirmed of motion when intirely unaccompanied with any muscular exertion.

† That sailing occasions costiveness is known to every sea-faring man; and I have seen swinging induce not only drowziness, but even sleep.

of them in certain constitutions, or when the dose or degree is too far increased, are apt to occasion giddiness, sickness and vomiting. The sedative power of sailing might also be farther illustrated by an enquiry into the nature of some other diseases, such as head-achs, diarrhœas, hæmorrhages, and genuine intermittents, for the cure of which it has sometimes proved successful ; but as this would necessarily lead me into too long a digression, I shall leave the reader to make his own comment on the subject.

Although I have endeavoured to prove that sailing and swinging are similar motions, and produce similar effects ; yet as there are some circumstances in which they differ, it may be of use to compare their relative advantages.

It is evident, at first sight, that sailing has the superiority over swinging in this particular, that the motion is continued night and day, both when we sleep and when we wake; and that besides this permanency of motion a change of climate may be obtained, and thus the patient whilst he is pursuing one mode of relief, may obtain another, perhaps no less necessary to him. On the other hand it must be acknowledged, that swinging has some advantages over sailing. It is a remedy within the reach of every one, rich or poor. The man, who like the oak is tied down to the soil which gave him birth, may as easily obtain it, as he who can change his situation at pleasure, and become a citizen of any country. Neither is swinging attended with the risk or inconvenience of sea voy-

ages; no difficulty in procuring proper nourishment for the sick, no violent vomiting to combat, nor is the patient exposed to the noxious effects of sea air, nor to the winter's cold; he can swing in his bed-chamber if necessary, although the open air is, on many accounts, to be preferred. This mode of relief also may be employed at any period of the disease, or in any degree of weakness.

To conclude: As the sedative power of motion, to which we have ascribed the efficacy of sailing and swinging, is a principle hitherto unknown, I have been at some pains fully to establish it; and am convinced in my own mind, that when conducted with skill and integrity, it will not only be found useful in the cure of pulmonary complaints, but may probably  
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be employed with advantage in a variety of other cases, especially when what is now suggested shall have been improved by the ingenuity and experience of future ages,

F I N I S.



*In the Press, and soon will be published,*

THE WORKS

OF THE LATE

DR. WILLIAM STARK,

*Revised and corrected from his original MSS.*

BY JAMES CARMICHAEL SMYTH, M.D.

THE W O R K S

OF THE LATE

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